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November 19, 1964

I. Introduction

This is the fourth monthly progress report of the work performed on Project 36. It covers the period from October 10 to November 10, 1964.

The objective of this project is to study methods for obtaining a modulated-light film viewing system.

Declass Review by NIMA/DOD

II. Progress in the last period.

Preparations have been made for a demonstration of the negative feedback effect.

The display is in a direct view mode using a 10SP4 kinescope. It has been found that the standard sulfide type phosphor has a blue component with sufficiently fast response to be usable in this application.

A photomultiplier positioned above the viewer's shoulder is presently being used for feedback signal pick-up.

The illuminating spot size is about 1/8 inch, and in this experimental equipment is scanned at standard television rate. At high brightness levels there is a perceptible flicker, which can be readily eliminated in any operational equipment by increasing the scanning rate to 90 cps.

The contrast compression achieved with the present equipment is 39:1 over a density range of 0 to 2.0. Peak illumination brightness was 1000 ft-lamberts.

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GROUP I
EXCLUDED FROM AUTOMATIC
DOWNGRADING AND DECLASSIFICATION

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THIS MATERIAL CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, TITLE 18, U.S.C., SECTIONS 793 AND 794, THE TRANSMISSION OR REVELATION OF WHICH IN ANY MANNER TO AN UNAUTHORIZED PERSON IS PROHIBITED BY LAW.

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Breadboard equipment for generation of box scan waveforms has been built. This equipment included circuitry to permit frequency modulation of the basic triangular waveforms in an experiment to evaluate whether rapidly varying quasi-random scan patterns were superior to a fixed pattern with respect to visibility of the pattern (the pattern should not be visible).

It was found that the fixed pattern was definitely superior.

Preliminary study has been started and a patent disclosure prepared on a scheme for contrast expansion in small areas.

If successful, this scheme would also permit other operations such as edge enhancement, and density contouring.

III. Work Planned for the Next Period.

a. The experimental demonstration will be improved where feasible in accordance with suggestions resulting from the forthcoming demonstration to [REDACTED]

b. Further tests of the box-scan generators will be conducted. Construction of locked oscillators (the present ones are free-running) will be undertaken if this is deemed necessary for satisfactory subjective evaluation of scan pattern.

c. Study of a detail sensor for modification of the negative feedback according to the information content will be continued.

d. Study of the system requirements for the small area contrast enhancement scheme will be continued if time permits.

IV. Financial Status.

Funds expended to 10/31/64.

July
Aug.
Sept.
Oct.

Total expended

[REDACTED]

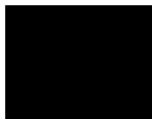
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Projected Expenditures.

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Nov.
Dec.
Jan.



Total expended and projected



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The above figures are preliminary, and do not represent a final accounting.

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